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A RECORD OF BANGIA IN THE NIAGARA RIVER

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ABSTRACT. The occurrence of the benthic red alga Bangia atropurpurea (Roth) Ag. in the Niagara River is recorded for the first time. A ten year history is presented. Bangia populations were only seen once in some locations. The most consistent location for sighting Bangia was at the mouth of Frenchman's Creek (just north of Fort Erie).

INTRODUCTION

The benthic Rhodophyte Bangia atropurpurea (Roth) Ag. is a marine alga which has invaded the Great Lakes system. Sheath (1987) provides an excellent account of the physiology, ecology and occurrence of Bangia in the Great Lakes. Briefly, anthropogenic inputs have increased salt concentrations in the lower Great Lakes and Bangia's tolerance of low salinity allowed it to adapt to this altered environment. The alga has spread rapidly because of its fecundity and a relative lack of predation pressure in the lakes' nearshore environment. Bangia has not yet been recorded in the Niagara River.

MATERIALS AND METHODS

While collecting Cladophora glomerata (L.) Kütz. for an analysis of metals content at a variety of sites along the Niagara River, the surrounding rocks were examined for the presence of other filamentous algal genera. The occurrence of Bangia was recorded in field notes. Some photographs were taken. On two occasions plants were preserved in 25 mL vials with a few drops of Lugol's solution in ambient river water.

RESULTS AND DISCUSSION

A record of Bangia in the Niagara River is provided in Table 1. All of the sites were either wave exposed or current swept. The most consistent location for sighting Bangia was at the mouth of Frenchman's Creek. The observations were made during times of peak Cladophora biomass in the summer, and more sites may have been found with Bangia had the observations been made in the spring or fall when Bangia would be more abundant (Graham and Graham 1987, Jackson 1988). The fact that these observations span a ten year time frame indicates that Bangia is firmly established in the Niagara River.

ACKNOWLEDGEMENTS

Mike Jackson and Alison Rodrigues provided detailed field notes and photographs which verified the presence of Bangia in the Niagara River in the early 1980's.

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TABLE 1. A record of Bangia in the Niagara River

Date		Location	Latitude	Longitude
1981	June 18 †	north side mouth of Frenchman's Creek	42° 56' 40"	78° 55' 40"
	July 23 †	100 m south of mouth of Usshers Creek	43° 03' 00"	79° 01' 20"
	July 23	north side mouth of Frenchman's Creek	42° 56' 40"	78° 55' 40"
	Aug. 19 †	100 m south of mouth of Usshers Creek	43° 03' 00"	79° 01' 20"
	Aug. 20 †‡	300 m east of City of Niagara Falls (N.Y.) wastewater treatment plant	43° 04' 30"	79° 02' 30"
1982	June 24	north side mouth of Frenchman's Creek	42° 56' 40"	78° 55' 40"
	June 24	lighthouse on American shore opposite Strawberry Island	42° 57' 30"	78° 54' 50"
1983	June 28	American Falls	43° 05' 10"	79° 04' 20"
	June 29	300 m east of City of Niagara Falls (N.Y.) wastewater treatment plant	43° 04' 30"	79° 02' 30"
1984	June 27	100 m south of mouth of Usshers Creek	43° 03' 00"	79° 01' 20"
1985	June 25	100 m south of mouth of Usshers Creek	43° 03' 00"	79° 01' 20"
	June 26	west side mouth of Gill Creek	43° 04' 30"	79° 01' 40"
1986		Bangia not seen		
1987	June 16	north side mouth of Frenchman's Creek	42° 56' 40"	78° 55' 40"
	June 18	west side mouth of Gill Creek	43° 04' 30"	79° 01' 40"
1988		Bangia not seen		
1989		No sampling		
1990	June 25	north side mouth of Frenchman's Creek	42° 56' 40"	78° 55' 40"
1991	June 21‡	north side mouth of Frenchman's Creek	42° 56' 40"	78° 55' 40"

† photograph taken

‡ preserved sample made